

# BINDING FOR SNOWBOARD

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

5           This invention relates to a binding for a snowboard (hereinafter referred to as a snowboard binding), and more particularly to a snowboard binding whose hardness can be adjusted.

### 2. Description of the Related Art

10           The snowboard binding is previously known JP-A-11-226171 (pages 1 to 3, Fig. 1).

          Fig. 8 is a perspective view of a conventional binding for a snowboard. Reference numeral 1 denotes a base plate attached to a snowboard body (not shown); 2 a heel cup attached to the rear of the base plate through a screw  
15           3; 4 a high-back coupled with the heel cup so as to be opposite to the rear of boots; 5 an adjustor for adjusting the degree of forward-bending for the heel cup; 6 a boot ankle fixing band whose one end is coupled with the one  
20           side of the heel cup 2 to tighten the instep of the boot; 7 a buckle whose one end is attached to the other end of the band 6; 8 a tightening belt whose base is fixed to the other end of the heel cup 2 so that it is inserted into the buckle 7 for band tightening; 9 a boot tiptoe  
25           fixing band attached to the base plate to tighten the

tiptoe of the boot; and 10 a band tightening buckle.

In such a conventional binding for a snowboard, when the boot is mounted on the base plate 1, after the boot ankle fixing band 6 and the tightening belt 8 have been separated from each other, with the boot placed on the base plate 1 from above and the belt 8 inserted into the buckle 7, the buckle 7 is tightened so that the inset of the boot is fixed to the base plate 1. Likewise, the tiptoe portion of the boot is fixed.

However, in the conventional snowboard binding, it is difficult for a user to sense exactly in front of a shop the feeling (hard or soft) when the tightening tools are used. In addition, if the user does not actually use the snowboard binding, in many points, he or she can first know his favorite hardness after a certain extent of experience. The snowboard binding is not so inexpensive. Therefore, if he or she first buys his non-favorite binding, he is obliged to use it with tolerance for the time being. Further, according to the contents of sliding, there is a case where the binding with a different hardness is preferably used. It is difficult to satisfy for a single binding such a requirement.

#### SUMMARY OF THE INVENTION

This invention intends to provides a snowboard

binding suited for such an object.

A binding for a snowboard according to this invention is that a binding for a snowboard including: a base plate; a heel cup; a coupling tool for coupling the base plate and the heel cup through a member for hardness adjustment; 5 a boot fixing band with one end attached to the one side of the heel cup; and a belt attached to the other side of the heel cup so as to be coupled with the band; wherein the member for hardness adjustment is replaceable by 10 another member with different hardness.

The binding for a snowboard according to this invention is wherein the member for hardness adjustment is detachably coupled with either one of the base plate and the heel cup, and the coupling tool is a tightening 15 tool of coupling the base plate and the heel cup through the member for hardness adjustment.

The binding for a snowboard according to this invention is wherein the member for hardness adjustment is inserted in a through-hole formed in one of the base 20 plate and the heel cup.

The binding for a snowboard according to this invention is wherein the through-hole is one of a plurality of through-holes.

The binding for a snowboard according to this 25 invention is wherein that the through-hole is a slender

hole.

The binding for a snowboard according to this invention is wherein the tightening tool is one of a plurality of tightening tools.

5        The binding for a snowboard according to this invention is wherein the coupling tool is a screw which passes through the member for hardness adjustment and threadedly-engaged with the other of the base plate and the heel cup.

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#### BRIEF DESCRIPTION OF THE DRAWAINGS

Fig. 1 is a side view of the main part of a snowboard binding according to this invention;

15        Fig. 2 is a cross-sectional plan view of the main part of the snowboard binding according to this invention;

Fig. 3 is a side view of the main part of a snowboard binding according to another embodiment of this invention;

20        Fig. 4 is a side view of the main part of a snowboard binding according to still another embodiment of this invention;

Fig. 5 is a side view of the main part of a snowboard binding according to yet another embodiment of this invention;

25        Fig. 6 is a side view of the main part of a snowboard binding according to a further embodiment of this

invention;

Fig. 7 is a longitudinal sectional side view of Fig.

6; and

Fig. 8 is a perspective view of a conventional  
5 snowboard binding.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Now referring to the drawings, an explanation will  
be given of an embodiment of this invention.

10 In this invention, like reference symbols refer to  
like portions in Fig. 8.

In this invention, as seen from Figs. 1 and 2, a  
through-hole 11 having a large diameter is provided at  
the rear of an upstanding portion 1a of each of both sides  
15 of the base plate 1. A groove 12 is formed on the outer  
periphery of the front side of the through-hole 11. A  
bushing 14 for hardness adjustment having a flange in  
mesh with the groove 12 is fit in the through-hole 11.  
A screw 3 is thread-engaged with a screw hole of the heel  
20 cup 2 through a screw through-hole 13 formed in the bushing  
14 for hardness adjustment. Thus, the heel cup 2 is fixed  
to the base plate 1.

The bushing 14 for harness adjustment may be an  
elastic body such as nylon, polyester, elastomer, urethane,  
25 rubber, etc.

In the snowboard binding according to this invention having the configuration as described above, when force from the ankle of a player is applied to the heel cup 2 through the band 6, the bushing 14 for hardness adjustment is deformed so that the hardness of the bushing 14 represents that of the heel cup 2. Therefore, if the bushing 14 for hardness adjustment having various degrees of hardness previously prepared is selectively used, the hardness of the heel cup 2 can be adjusted in a wide range.

10      Additionally, another arrangement as shown in Fig. 3 may be adopted. Specifically, a plurality of through-holes 11 each having a large diameter which is the same as shown in Fig. 2 are provided at the rear of the upstanding portion 1a of the base plate 1. The bushings for hardness adjustment which is the same as shown in Fig. 2 are fixedly fit in the through-holes 14, respectively. The heel cup 2 is fixed to the base plate 1 using screws 3 through the plurality of bushings 14 for hardness adjustment.

20      Further, still another arrangement as shown in Fig. 4 may be adopted. Specifically, a slender through-hole 15 which extends in a longitudinal direction is provided at the rear of the upstanding portion 1a of the base plate 1. A groove (not shown) is formed on the outer periphery of the front side of the through-hole 11. A bushing 16

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for hardness adjustment having a flange in mesh with the groove is fit in the through-hole 15. The heel cup 2 is fixed to the base plate 1 using screws 3 through the bushing 16 for hardness adjustment.

5 Further, a further arrangement as shown in Fig. 5 may be adopted. Specifically, a step portion 17 having a smaller diameter is formed in the intermediate portion in an axial direction of the through-hole 11. The bushing 14 for hardness adjustment is formed to have a short length so that its tip abuts on the step portion 17. A space 10 18 is formed between the heel cup 2 and the bushing 14 for hardness adjustment so that the screw 3 can move freely.

Figs. 6 and 7 show another embodiment of this invention.

15 In this embodiment, the through-hole 11 is formed as a long groove-equipped hole 19 which extends vertically. A flange-equipped bushing 20 which also extends vertically is formed to be in mesh with the long hole 19. The flange-equipped bushing is fit in the long hole 19. Thus, 20 the heel cup 2 is fixed to the base plate 1 using a single screw 3 inserted into the bushing 20.

In this embodiment, the bushing 20 for hardness adjustment can be deformed also in the direction of the long hole 19.

25 The snowboard binding according to this invention

which has the configuration as described above provides the following advantage. Specifically, after a user has bought a snowboard binding, he can adjust the hardness of the heel cup in two or more degrees. Therefore, the user needs not be nervous in buying the snowboard binding and can adjust the feeling of the binding according to his preference and sliding contents.